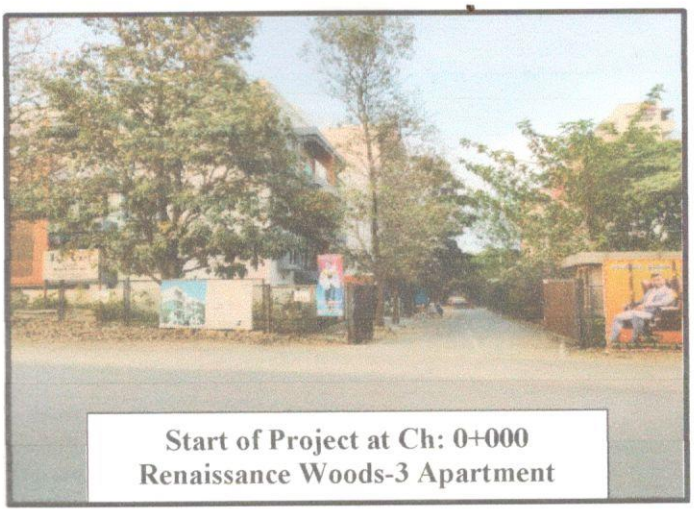
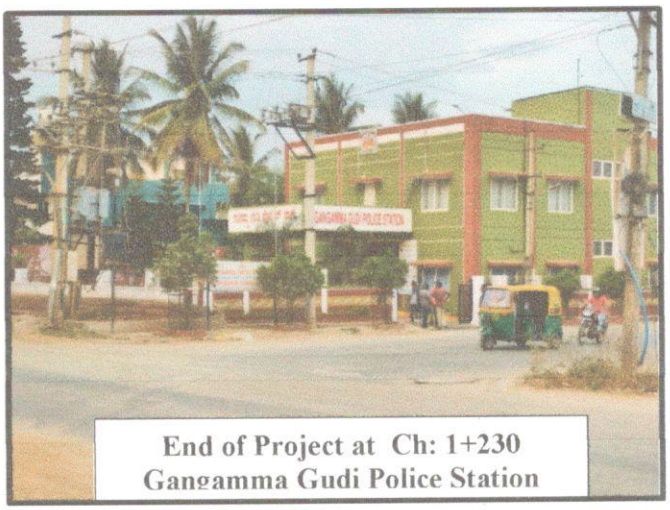
BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP)

Office of the Executive Engineer,
Road Infrastructure – Dasarahalli Division
No. 207, 2nd floor, New Annexe Building-3, N R Square, Bengaluru-560002

PROJECT: WIDENING AND COMPREHENSIVE DEVELPOMENT OF ABBIGERE MAIN ROAD FROM RENAISSANCE WOODS - 3 APARTMENTS TO ABBIGERE PARK.



Start of Project at Ch: 0+000
Renaissance Woods-3 Apartment



End of Project at Ch: 1+230
Gangamma Gudi Police Station

Contractor: Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.

QUALITY TEST REPORT

SECOND & PART BILL

PMC Consultant:

NEZ INFRATECH PRIVATE LIMITED
2nd Floor, P.Veerappa Arcade, Ittamadu Main Road,
Archalli, Subramanyapura Post, Bangalore–560061,
Ph : +91 80 26731005, 43008989.
Email: info@nezpl.com, nezsvy@gmail.com.

NEZ Infratech Private Limited
Civil Engineering Consultants
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Phone No : +91 80 26731005, 40397979 e-mail : nezsvy@gmail.com info@nezpl.com website:www.nezpl.com
CIN:U70100KA2015PTC084544, PAN:AAFCN1036R, GSTIN 29AAFCN1036R1ZZ

Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure - Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Cement
Technical References	IS: 4031 Part -II

SPECIFIC GRAVITY OF CEMENT

Section/ Location of Lab	: NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061
Name/Brand of Cement	: ACC
Grade of Cement	: O.P.C- 53 Grade
Date of testing	: 9-09-2021

Determination	Trail No.			Average
	1	2	3	
Weight of bottle (w1)	122	122	122	122
Weight of bottle with sample (w2)	181	180	179	180
Weight of bottle with sample and kerosene(w3)	375	373	372	373
Weight of bottle with kerosene (w4)	330	330	330	330
Specific Gravity of Kerosene	0.79	0.79	0.79	0.79
Specific Gravity of cement	**3.3**	**3.05**	**3.00**	**3.11**

Remarks: The Specific Gravity of Cement as per IS 4031- Part –II is nearly 3.15.

Prepared by Checked by Approved by

Nez Infratech Pvt. Ltd.

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Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure - Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Cement
Technical References	IS: 4031 Part -II

SPECIFIC GRAVITY OF CEMENT

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED
No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Name/Brand of Cement : ACC

Grade of Cement : O.P.C- 53 Grade

Date of testing : 9-09-2021

Determination	Trail No.			Average
	1	2	3	
Weight of bottle (w1)	122	122	122	122
Weight of bottle with sample (w2)	182	179	180	180
Weight of bottle with sample and kerosene (w3)	375	373	373	374
Weight of bottle with kerosene (w4)	330	330	330	330
Specific Gravity of Kerosene	0.79	0.79	0.79	0.79
Specific Gravity of cement	**3.16**	**3.22**	**3.05**	**3.14**

Remarks: The Specific Gravity of Cement as per IS 4031- Part –II is nearly 3.15.

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Nez Infratech Pvt. Ltd.

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ರಸ್ತೆ ಮೂಲಭೂತ ಸೌಕರ್ಯಗಳು, (ದಾಸರಹಳ್ಳಿ ವಿಭಾಗ)
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹನಗರ ಪಾಲಿಕೆ
ಬೆಂಗಳೂರು - 02

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CIN:U70100KA2015PTC084544, PAN:AAFCN1036R, GSTIN 29AAFCN1036R1ZZ

Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – *Dasarahalli Division*
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Cement
Technical References	IS: 4031 Part -I

FINENESS OF CEMENT
(IS: 4031 PART- I)

Section/ Location of Lab	:	NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061
Name/Brand of Cement	:	ACC
Grade of Cement	:	O.P.C- 53 Grade
Date of testing	:	9-09-2021

Sl. No.	DESCRIPTION	1	2	3	SPECIFIED LIMIT AS PER IS 8112
1	Wt. of Sample taken (W1) gm	100	100	100	Max. 10%
2	Wt. of residue on 90 mic. sieve (W2) gm	5.65	8.32	7.93	
3	Fineness (%) (W2/W1)X100	5.65	8.32	7.93	
	Average (%)	7.3			

Remarks: The test for Fineness of cement has passed and within the limit as specified by IS code.

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NEZ Infratech Pvt. Ltd.

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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

NEZ Infratech Private Limited
Civil Engineering Consultants
CIDC Regd No 220929
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Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Cement
Technical References	IS: 4031 Part -I

FINENESS OF CEMENT

Section/ Location of Lab	:	NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061
Name/Brand of Cement	:	ACC
Grade of Cement	:	O.P.C- 53 Grade
Date of testing	:	9-09-2021

Sl. No.	DESCRIPTION	1	2	3	SPECIFIED LIMIT AS PER IS 8112
1	Wt. of Sample taken (W1) gm	100	100	100	Max. 10%
2	Wt. of residue on 90mic. sieve (W2) gm	7.22	8.54	6.8	
3	Fineness (%) (W2/W1)X100	7.22	8.54	6.8	
	Average (%)	7.52			

Remarks: The test for Fineness of cement has passed and within the limit as specified by IS code.

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NEZ Infratech Pvt. Ltd.

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ಬೆಂಗಳೂರು - ೫೬

No.1, 2nd Floor, P. Veerappa Arcade, Ittamadu Main Road, Arehalli, Subramanyapura Post, Bengaluru - 560061
Phone No : +91 80 26731005, 40397979 e-mail : nezsvy@gmail.com info@nezpl.com website:www.nezpl.com
CIN:U70100KA2015PTC084544, PAN:AAFCN1036R, GSTIN 29AAFCN1036R1ZZ

Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Cement
Technical References	IS: 4031 & IS: 269-2015.

PHYSICAL TESTS ON CEMENT

Section/ Location of Lab	:	NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061
Name/Brand of	:	ACC- 53 Grade
Type	:	O.P.C
Period of test	:	13-09-2021 to 16-09-2021

Sl. No.	Name of Test	Test Result	Requirements as per IS 269-2015
1	Initial setting time	**137 min**	Shall not be less than 30 min
2	Final setting time	**255 min**	Shall not be more than 600 min
3	Compressive strength a) 3 days b) 7 days	**30.35 N/ Sq mm** **45.2 N/ Sq mm**	Shall not be less than 27 N/ Sq mm 37 N/ Sq mm

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CIN:U70100KA2015PTC084544, PAN:AAFCN1036R, GSTIN 29AAFCN1036R1ZZ

CHEMICAL TESTS

Sl. No.	Name of Test	Test Result	Requirements as per IS 269-2015
1	Ratio of percentage of lime to percentage of silica, alumina and iron oxide	0.94	0.66-1.02
2	Ratio of percentage of Alumina to Iron Oxide	1.29	Not less than 0.66
3	Insoluble Residue (% by mass)	2.67	Not more than 5%
4	Magnesia, (% by mass)	1.48	Not more than 6%
5	Sulphuric anhydride, (% by mass)	2.26	Not more than 3.5%
6	Total loss on Ignition (% by mass)	1.8	Not more than 5%
7	Total chlorides (% by mass)	0.0215	0.10 max

Remarks: the physical and chemical properties of the cement are within the permissible limits.

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Nez Infratech Pvt. Ltd

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ಬೆಂಗಳೂರು - 92.

NEZ Infratech Private Limited
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CIN:U70100KA2015PTC084544, PAN:AAFCN1036R, GSTIN 29AAFCN1036R1ZZ

Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Fine aggregates - M sand
Technical References	IS: 383-2016

SEIVE ANALYSIS OF FINE AGGREGATE

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED
No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Source of Material : M-Sand

Date of Testing : 17-09-2021 1500gm

IS Sieve Size, mm	Percentage Passing	Specification as Per IS: 383-2016 Percentage Passing				Remarks
		Zone-I	Zone-II	Zone-III	Zone-IV	
10	**100**	100	100	100	100	The Sample Conforms to Grading Zone-II
4.75	**96.5**	90-100	90-100	90-100	95-100	
2.36	**81.5**	60-95	75-100	85-100	95-100	
1.18	**63.5**	30-70	55-90	75-100	90-100	
600.mic	**46.7**	15-34	35-59	60-79	80-100	
300.mic	**24.6**	5-20	8-30	12-40	15-50	
150.mic	**9.3**	0-20	0-20	0-20	0-15	

Remarks: the fine aggregate conforms to specification of zone II.

Prepared by Checked by Approved by

Nez Infratech Pvt. Ltd.

NEZ Infratech Private Limited
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Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Fine aggregates - M sand
Technical References	IS: 383-2016

SPECIFIC GRAVITY OF FINE AGGREGATE

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED
No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Source of Material : M-Sand

Date of Testing : 17-09-2021

BY PYCNOMETER METHOD

Description	1	2	3
Pycnometer Bottle Number	A	B	C
Weight of Pycnometer(W1) (g)	446	446	446
Weight of Pycnometer + Sample (W2) (g)	980	975	973
Weight of bottle + Water + Sample (W3)(g)	1535	1530	1528
Weight of Pycnometer + Water (W4)(g)	1200	1200	1200
Specific Gravity	2.68	2.65	2.64
Water Absorption	0.81	0.60	0.78
Average Specific Gravity	**2.66**		
Average Water Absorption (%)	**0.73**		

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ಬೆಂಗಳೂರು - 02.

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Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Fine aggregates - M sand
Technical References	IS: 383-2016

SPECIFIC GRAVITY OF FINE AGGREGATE

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED
No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Source of Material : M-Sand

Date of Testing : 17-09-2021

BY PYCNOMETER METHOD

Description	1	2	3
Pycnometer Bottle Number	A	B	C
Weight of Pycnometer(W1) (g)	446	446	446
Weight of Pycnometer + Sample (W2) (g)	975	976	980
Weight of bottle + Water + Sample (W3)(g)	1535	1531	1528
Weight of Pycnometer + Water (W4)(g)	1200	1200	1200
Specific Gravity	2.69	2.66	2.60
Water Absorption	1.21	1.01	0.95
Average Specific Gravity		**2.65**	
Average Water Absorption (%)		**1.05**	

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Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Fine aggregates - M sand
Technical References	IS: 383-2016

SEIVE ANALYSIS OF FINE AGGREGATE

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED
No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Source of Material : M-Sand

Date of Testing : 17-09-2021

IS Sieve Size, mm	Percentage Passing	Specification as Per IS: 383-2016 Percentage Passing				Remarks
		Zone-I	Zone-II	Zone-III	Zone-IV	
10	**100**	100	100	100	100	The Sample Conforms to Grading Zone-II
4.75	**96.35**	90-100	90-100	90-100	95-100	
2.36	**79.3**	60-95	75-100	85-100	95-100	
1.18	**64.20**	30-70	55-90	75-100	90-100	
600.mic	**43.50**	15-34	35-59	60-79	80-100	
300.mic	**25.9**	5-20	8-30	12-40	15-50	
150.mic	**8.5**	0-20	0-20	0-20	0-15	

Remarks: the fine aggregate conforms to specification of zone II.

Prepared by Checked by Approved by

Nez Infratech Pvt. Ltd.

Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Coarse aggregates
Technical References	IS: 2386 Part -1

SEIVE ANALYSIS OF COARSE AGGREGATE

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED
No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Source of Material : Coarse Aggregate

Date of Testing : 18-09-2021 Total Wt. of Sample : 3000gm

IS Sieve Size, mm	Wt. Retained (g)	% of Wt. Retained	% Cumulative Wt. Retained	% Passing	Specified % of passing
25	0	0	0	**100**	100
20	75	2.5	2.5	**97.5**	85-100
10	2813	93.76	96.26	**3.74**	0-20
4.75	92	3.06	99.32	**0.68**	0-5
Pan	20	0.68	100	**0**	

Remarks: the obtained percentage passing is within the specified limits.

Nez Infratech Pvt. Ltd.

Prepared by Checked by Approved by

ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು
ರಸ್ತೆ ಮೂಲಭೂತ ಸೌಕರ್ಯಗಳು, (ದಾಸರಹಳ್ಳಿ ವಿಭಾಗ)
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಬೆಂಗಳೂರು - ೫೭

NEZ Infratech Private Limited
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Phone No : +91 80 26731005, 40397979 e-mail : nezsvy@gmail.com info@nezpl.com website:www.nezpl.com
CIN:U70100KA2015PTC084544, PAN:AAFCN1036R, GSTIN 29AAFCN1036R1ZZ

Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Coarse aggregates
Technical References	IS: 2386 Part -1

FLAKINESS INDEX AND ELONGATION INDEX (IS:2386 PART-I)

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Type of Material : Coarse Aggregate

Date of Testing : 18-09-2021 Total Wt. of Sample : 6000gm

IS Sieve Size, mm		Total Weight of Aggregate taken (g)	Weight of aggregate Retained on sieve(g)	Wt. of flaky Aggregates (g)	Wt. of Retained Aggregates on flaky(g)	Wt. of Elongated Aggregates (g)
Passing	Retained					
25	20	6000	3098	482	2674	186
20	16		1850	231	1619	168
16	12.5		585	118	472	84
12.5	10		329	92	238	74
10	6.3		110	36	75	24
Total (gm)			5972	959	5078	536

Flakiness Index = 959/59 72= **0.16** Elongation Index = 536/5078 = **0.105**

Combined Flakiness and Elongation Indices = (0.16+0.105)*100 = **26.5 %**

Remarks: The obtained combined flakiness and elongation index is less than 35% as specified in MORT&H.

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CIN:U70100KA2015PTC084544, PAN:AAFCN1036R, GSTIN 29AAFCN1036R1ZZ

Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Coarse aggregates
Technical References	IS: 2386 Part -1

FLAKINESS INDEX AND ELONGATION INDEX (IS:2386 PART-I)

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED
No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Type of Material : Coarse Aggregate

Date of Testing : 18-09-2021 Total Wt. of Sample : 6000gm

IS Sieve Size, mm		Total Weight of Aggregate taken (g)	Weight of aggregate Retained on sieve(g)	Wt. of flaky Aggregates (g)	Wt. of Retained Aggregates on flaky(g)	Wt. of Elongated Aggregates (g)
Passing	Retained					
25	20	6000	3130	474	2656	195
20	16		1790	245	1545	173
16	12.5		590	124	466	92
12.5	10		350	89	261	82
10	6.3		112	42	70	28
Total (gm)			5972	974	4998	570

Flakiness Index = 974/5972 = **0.163** Elongation Index = 570/4998 = **0.12**

Combined Flakiness and Elongation Indices = (0.163+0.12)*100 = **28.3 %**

Remarks: The obtained combined flakiness and elongation index is less than 35% as specified in MORT&H.

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Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Coarse aggregates
Technical References	IS: 2386 Part -IV

AGGREGATE IMPACT VALUE
(IS:2386 PART-IV)

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED
No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Type of Material : Coarse Aggregate Date of Testing : 18-09-2021

Total Wt. of Sample : 6000gm

Description	Symbol	Unit	Determinations		
			1	2	3
Weight of aggregate passing through IS Sieve 12.5mm & retained on 10mm	W1	g	335	336	332
Weight of fraction retained on 2.36 mm IS Sieve	W2	g	270	267	268
Weight of fraction passing through 2.36 mm IS Sieve	W3=W1-W2	g	65	69	64
Aggregate Impact Value	(W3/W1)X100	%	19.40	20.53	19.3
Average Aggregate Impact Value		%	19.74		

Remarks: the aggregate impact value obtained is lesser than 30% as specified in MORT&H.

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Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Coarse aggregates
Technical References	IS: 2386 Part -IV

AGGREGATE IMPACT VALUE
(IS:2386 PART-IV)

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED
No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Type of Material : Coarse Aggregate Date of Testing : 18-09-2021

Total Wt. of Sample : 6000gm

Description	Symbol	Unit	Determinations		
			1	2	3
Weight of aggregate passing through IS Sieve 12.5mm & retained on 10mm	W1	g	336	338	334
Weight of fraction retained on 2.36 mm IS Sieve	W2	g	266	273	270
Weight of fraction passing through 2.36 mm IS Sieve	W3=W1-W2	g	70	65	64
Aggregate Impact Value	(W3/W1)X100	%	20.8	19.2	19.2
Average Aggregate Impact Value		%	19.7		

Remarks: the aggregate impact value obtained is lesser than 30% as specified in MORT&H.

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Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Coarse aggregates
Technical References	IS: 2386, IS: 383 - 2016 & MORT&H Specification Vth Revision - 2013.

SOUNDNESS TEST OF COARSE AGGREGATES

Sl. No.	Test Conducted	Test Result	Test Confirms to IS 2386(Part I to IV) - 1963(R.A on 2007) & Requirements as per IS: 383-2016 & M.o.R.T.H Specification, Vth Revision - 2013.
1	i) When tested with Sodium Sulphate, %	0.93	Not more than 12%
	ii) When tested with Magnesium Sulphate, %	1.1	Not more than 18%

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Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Concrete cubes for drain raft near Ashok college.
Technical References	IS: 516-2006

COMPRESSIVE STRENGTH OF CONCRETE CUBES (IS:516-2006)

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Grade of Concrete : M20 Date of Casting: 10-04-2022

Water-Cement Ratio : 0.45 Date of Testing: 9-05-2022

Description of Cement : OPC - ACC Cement, 53- Grade

Size of Concrete Cube : (150 x 150 x 150) mm

Sl. No.	Age in Days	Weight (Kg)	Area of cube (mm^2)	Load at Failure (kN)	Compressive Strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	28	8.06	22500	468	20.8	20.7
2	28	8.09	22500	465	20.6	
3	28	8.00	22500	469	20.8	

Remarks: The Concrete Cubes achieved the required Compressive Strength for 28 days and passed the test.

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NEZ Infratech Pvt. Ltd. Mgr.

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Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Concrete cubes for drain raft near Police station.
Technical References	IS: 516-2006

COMPRESSIVE STRENGTH OF CONCRETE CUBES (IS:516-2006)

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Grade of Concrete : M20 Date of Casting: 15-05-2022

Water-Cement Ratio : 0.45 Date of Testing: 14-06-2022

Description of Cement : OPC - ACC Cement, 53- Grade

Size of Concrete Cube : (150 x 150 x 150) mm

Sl. No.	Age in Days	Weight (Kg)	Area of cube (mm^2)	Load at Failure (kN)	Compressive Strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	28	8.05	22500	471	20.9	**21.06**
2	28	7.9	22500	475	21.1	
3	28	8.10	22500	476	21.2	

Remarks: Remarks: The Concrete Cubes achieved the required Compressive Strength for 28 days.

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ಬೆಂಗಳೂರು

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Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Concrete cubes for drain raft near Vishveshwara Layout.
Technical References	IS: 516-2006

COMPRESSIVE STRENGTH OF CONCRETE CUBES (IS:516-2006)

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Grade of Concrete : M20 Date of Casting: 02-05-2022

Water-Cement Ratio : 0.45 Date of Testing: 01-06-2022

Description of Cement : OPC - ACC Cement, 53- Grade

Size of Concrete Cube : (150 x 150 x 150) mm

Sl. No.	Age in Days	Weight (Kg)	Area of cube (mm^2)	Load at Failure (kN)	Compressive Strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	28	8.11	22500	478	21.2	21.3
2	28	8.05	22500	482	21.4	
3	28	8.10	22500	485	21.5	

Remarks: The Concrete Cubes achieved the required Compressive Strength for 28 days.

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Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Concrete cubes for drain wall near Vishveswara Layout.
Technical References	IS: 516-2006

COMPRESSIVE STRENGTH OF CONCRETE CUBES (IS:516-2006)

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Grade of Concrete : M20 Date of Casting: 04-05-2022

Water-Cement Ratio : 0.45 Date of Testing: 02-06-2022

Description of Cement : OPC - ACC Cement, 53- Grade

Size of Concrete Cube : (150 x 150 x 150) mm

Sl. No.	Age in Days	Weight (Kg)	Area of cube (mm^2)	Load at Failure (kN)	Compressive Strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	28	7.99	22500	482	21.4	**21.5**
2	28	8.0	22500	489	21.7	
3	28	8.12	22500	485	21.5	

Remarks: The Concrete Cubes achieved the required Compressive Strength for 28 days.

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Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Concrete cubes for drain wall at police station.
Technical References	IS: 516-2006

COMPRESSIVE STRENGTH OF CONCRETE CUBES (IS:516-2006)

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Grade of Concrete : M20 Date of Casting: 17-05-2022

Water-Cement Ratio : 0.45 Date of Testing: 16-06-2021

Description of Cement : OPC - ACC Cement, 53- Grade

Size of Concrete Cube : (150 x 150 x 150) mm

Sl. No.	Age in Days	Weight (Kg)	Area of cube (mm^2)	Load at Failure (kN)	Compressive Strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	28	8.12	22500	470	20.9	21.2
2	28	8.06	22500	477	21.2	
3	28	8.00	22500	483	21.5	

Remarks: The Concrete Cubes achieved the required Compressive Strength for 28 days.

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Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Concrete cubes for deck slab at Ashok college.
Technical References	IS: 516-2006

COMPRESSIVE STRENGTH OF CONCRETE CUBES (IS:516-2006)

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Grade of Concrete : M20 Date of Casting: 16-05-2022

Water-Cement Ratio : 0.45 Date of Testing: 17-05-2022

Description of Cement : OPC - ACC Cement, 53- Grade

Size of Concrete Cube : (150 x 150 x 150) mm

Sl. No.	Age in Days	Weight (Kg)	Area of cube (mm^2)	Load at Failure (kN)	Compressive Strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	28	7.99	22500	497	22.08	22.1
2	28	8.05	22500	492	21.8	
3	28	8.12	22500	505	22.4	

Remarks: The Concrete Cubes achieved the required Compressive Strength for 28 days.

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Phone No : +91 80 26731005, 40397979 e-mail : nezsvy@gmail.com info@nezpl.com website:www.nezpl.com
CIN:U70100KA2015PTC084544, PAN:AAFCN1036R, GSTIN 29AAFCN1036R1ZZ

Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Concrete cubes for deck slab at Vishveshwara Layout.
Technical References	IS: 516-2006

COMPRESSIVE STRENGTH OF CONCRETE CUBES (IS:516-2006)

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED
No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Grade of Concrete : M20 Date of Casting: 13-05-2022

Water-Cement Ratio : 0.45 Date of Testing: 12-06-2022

Description of Cement : OPC - ACC Cement, 53- Grade

Size of Concrete Cube : (150 x 150 x 150) mm

Sl. No.	Age in Days	Weight (Kg)	Area of cube (mm^2)	Load at Failure (kN)	Compressive Strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	28	8.00	22500	490	21.8	21.7
2	28	8.02	22500	485	21.5	
3	28	8.06	22500	491	21.8	

Remarks: The Concrete Cubes achieved the required Compressive Strength for 28 days.

Prepared by Checked by Approved by

NEZ Infratech Pvt. Ltd

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಮೂಲಭೂತ ಸೌಕರ್ಯಗಳು, (ದಾಸರಹಳ್ಳಿ ವಿಭಾಗ)
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

NEZ Infratech Private Limited
Civil Engineering Consultants
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Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Concrete cubes for deck slab near police station.
Technical References	IS: 516-2006

COMPRESSIVE STRENGTH OF CONCRETE CUBES (IS:516-2006)

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Grade of Concrete : M20 Date of Casting: 30-05-2022

Water-Cement Ratio : 0.45 Date of Testing: 29-06-2022

Description of Cement : OPC - ACC Cement, 53- Grade

Size of Concrete Cube : (150 x 150 x 150) mm

Sl. No.	Age in Days	Weight (Kg)	Area of cube (mm^2)	Load at Failure (kN)	Compressive Strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	28	8.10	22500	506	22.5	22.2
2	28	7.96	22500	497	22.1	
3	28	8.00	22500	493	21.9	

Remarks: The Concrete Cubes achieved the required Compressive Strength for 28 days.

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ಬೆಂಗಳೂರು - ೫೬

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Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Concrete cubes for parapet wall of SSM culvert.
Technical References	IS: 516-2006

COMPRESSIVE STRENGTH OF CONCRETE CUBES (IS:516-2006)

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Grade of Concrete : M20 Date of Casting: 24-04-2022

Water-Cement Ratio : 0.45 Date of Testing: 23-05-2022

Description of Cement : OPC - ACC Cement, 53- Grade

Size of Concrete Cube : (150 x 150 x 150) mm

Sl. No.	Age in Days	Weight (Kg)	Area of cube (mm^2)	Load at Failure (kN)	Compressive Strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	28	8.1	22500	487	21.6	21.43
2	28	8.0	22500	479	21.3	
3	28	8.1	22500	482	21.4	

Remarks: The Concrete Cubes achieved the required Compressive Strength for 28 days.

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ಬೆಂಗಳೂರು - 02

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Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Concrete cubes for retaining wall.
Technical References	IS: 516-2006

COMPRESSIVE STRENGTH OF CONCRETE CUBES (IS:516-2006)

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Grade of Concrete : M20 Date of Casting: 10-04-2022

Water-Cement Ratio : 0.45 Date of Testing: 09-05-2022

Description of Cement : OPC - ACC Cement, 53- Grade

Size of Concrete Cube : (150 x 150 x 150) mm

Sl. No.	Age in Days	Weight (Kg)	Area of cube (mm^2)	Load at Failure (kN)	Compressive Strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	28	8.1	22500	491	21.8	21.6
2	28	8.0	22500	483	21.5	
3	28	8.1	22500	486	21.6	

Remarks: The Concrete Cubes achieved the required Compressive Strength for 28 days.

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Nez Infratech Pvt. Ltd.

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Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	Tata TMT Steel bars
Technical References	IS 1786-2008

TEST REPORT ON REINFORCEMENT STEEL
(IS 1786-2008)

Section/ Location of Lab	:	NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061
Grade of Steel	:	Fe 550
Description of Steel	:	TATA TMT STEEL
Date of Testing	:	20-09-2021

		10mm		12mm		16mm	
Sl. No.	Details	Test Results	Min Req. as per IS 1786-2008	Test Results	Min Req. as per IS 1786-2008	Test Results	Min Req. as per IS 1786-2008
1	Dia of bar	10mm	10mm	12mm	12mm	16mm	16mm
2	Weight per meter Length Kg/m	0.626	0.567	0.9	0.834	1.58	1.483
3	Yield Stress fy, N/mm2	665	550	647	550	656	550
4	Percentage of Elongation, %	20.0	10	20.6	10	20.2	10
5	Ultimate Tensile Strength N/mm2	715	585	697	585	704	585
6	Re Bend test	OK		OK		OK	

20mm		25mm	
Test Results	**Min Req. as per IS 1786-2008**	**Test Results**	**Min Req. as per IS 1786-2008**
20mm	20mm	25mm	25mm
2.483	2.366	3.865	3.697
665	550	643	550
19.5	10	21	10
720	585	701	585
OK		OK	

CHEMICAL PROPERTIES OF STEEL

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED
No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Grade of Steel : Fe 550

Description of Steel : TATA TMT STEEL

Date of Testing : 20-09-2021

Sl. No.	Name of the Constituents	10mm	12mm	16mm	20mm	25mm	Requirements as per IS 1786-2008
1	Carbon, % max	0.143	0.175	0.167	0.16	0.182	<0.3
2	Sulphur, % max	0.026	0.022	0.025	0.028	0.03	<0.055
3	Phosphorous, % max	0.036	0.034	0.03	0.028	0.036	<0.05
4	Sulphur,& Phosphorous, % max	0.06	0.057	0.054	0.052	0.061	<0.1

Remarks: the physical and chemical test results obtained are within the permissible limits.

Prepared by Checked by Approved by

Nez Infratech Pvt. Ltd.

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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಬೆಂಗಳೂರು (ದಾಸರಹಳ್ಳಿ ವಿಭಾಗ)

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Agency	Shri. K. P. Dinesh Kumar, M/s Chowdeshwari Concrete India Pvt. Ltd. #801, 8th main, 5th cross, 4th stage BEML Nagar, Rajarajeshwarinagar, Bengaluru.
Name of the work	Widening and Comprehensive Development of Abbigere main road from Renaissance Woods – 3 Apartment to Gangamma Gudi Police Station.
Sample Identification	VG30 Bitumen
Technical References	IS: 73-2019

PENETRATION TEST
(IS: 1203-1978)

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061

Description : Bitumen VG30

Date of Testing : 26-03-2022

Readings	Test number			Average
	1	2	3	
Penetrometer dial readings				
Initial (mm)	0	0	0	
Final (mm)	45	47	48	
Penetration value (mm)	45	47	48	**46.7**

Remarks: The obtained bitumen penetration is greater than 45mm as specified in IS: 73-2019.

Prepared by

Checked by

Approved by

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ಬೆಂಗಳೂರು - 92.